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09/931,491	08/16/2001	Dietmar Rudy	INA-PT057 (3678-18-US.1)	3673

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EXAMINER

JONES, JUDSON

ART UNIT PAPER NUMBER

2834

DATE MAILED: 12/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/931,491

Applicant(s)

RUDY, DIETMAR

Examiner

Judson H. Jones

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-7,9 and 12-15 is/are rejected.
- 7) ☒ Claim(s) 3,8,10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

Figures 1 and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rotating disk drivable by the guide rail as recited in claim 8 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novak et al. 6,134,981 in view of Ulbrich 6,011,374, Nelle et al. 6,163,970 and Schunck et al. 4,152,594. Novak et al. discloses a guide rail 18a, 18b on which a guide carriage 20 is supported, a drive formed with a first drive element on the guide rail 16a, 16b and a second drive element on the

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guide carriage for an XY positioning system as described in column 5 lines 27-34 and a distance measuring system as described in column 15 lines 28-59 which includes "an inductive type proximity sensor" and "a conventional mechanical encoder." Novak et al. does not disclose if the conventional mechanical encoder includes a measuring strip and a measuring head and does not disclose an acceleration sensor having an eddy current sheet and an exciter block. However Nelle et al. discusses several prior art encoders in column 1 line 18 to column 3 line 19, with scales (i.e., measuring strips) and scanning heads (i.e., measuring heads). Since Nelle et al. and Novak are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have understood that the "conventional mechanical encoder" of Novak included a measuring strip and measuring head. In regard to the acceleration sensor, Ulbrich teaches using utilizing first and second positioning systems in column 1 lines 34-56 and teaches making the second positioning system an acceleration detector based on the Ferraris principle in column 4 lines 36-42. Since Ulbrich and Novak et al. as modified by Nelle et al. are both from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized first and second position detection systems and in addition to have made the second position detection system an acceleration detector in order to increase the accuracy of the positioning system. While Novk et al. as modified by Nelle et al. and Ulbrich discloses the linear guide, the guide rail, the guide carriage, the measuring strip, measuring head and acceleration sensor based on the Ferraris system, it does not disclose what the Ferraris system is. However Schunck et al. describes a Ferraris drive having a metal wheel (i.e., an eddy current sheet) in column 2 lines 49-52. Since Schunck et al. and Novak et al. as modified by Ulbrich and Nelle et al. are both from

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the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to include an eddy current sheet in the Ferraris type acceleration system because Ferraris acceleration sensors need an eddy current sheet to operate properly.

In regard to claim 4, see Schunck et al. column 3 lines 4-6 which discloses using a non-magnetic material for an eddy current sheet. Since Schunck et al. is using his acceleration sensor for measuring rotational motion, the eddy current sheet is not located in an elongated groove of a guide rail. However Nelle et al. teaches placing graduation carriers in a dovetail-shaped groove in the motor support, to protect the graduation carriers. It would have been obvious at the time the invention was made for one of ordinary skill in the art to have similarly protected the eddy current sheet by placing it in a groove.

Claims 2, 5, 9, 12, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novak et al. as modified by Ulbrich, Nelle et al. and Schunck et al. as applied to claim 1 and further in view of Dostal 3,612,642 and Fulwood et al. 5,945,754. Schunck et al. discloses an exciter block as shown in figure 1 with electromagnets 4 and 5 instead of permanent magnets. However Fulwood et al. teaches in column 4 lines 9-13 that electro-magnets can be substituted for permanent magnets and vice versa. Also Dostal teaches in column 3 lines 11-17 that a permanent magnet and electro-magnet can be combined together, which would provide an initial bias for the electro-magnet. Since Dostal, Fulwood et al. and Novak et al. as modified by Ulbrich, Nelle et al. and Schunck et al. are all from the same field of endeavor, it would have been obvious at the time the invention was made for one of ordinary skill in the art to have utilized either permanent magnets, electro-magnets or combinations of permanent magnets and electro-magnets as the magnetic flux providers in an acceleration measuring system. The

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advantages of permanent magnets are ease of use because no power supply is required while the advantages of electro-magnets are better control and no problems with demagnetization.

In regard to claims 5 and 12, see Schunck et al. figure 1 which shows a U-shaped exciter block that partially surrounds the eddy current sheet. Putting the exciter block inside a housing as recited in claim 5 is not viewed as a patentable advance. Housings are well known for protecting machine elements from damage.

In regard to claims 14 and 15, see Schunck et al. column 3 lines 4-6 which discloses using aluminum for an eddy current sheet. While Schunck et al. does not mention copper, that material also has preferred properties for an eddy current acceleration sensor. Those properties are being non-magnetic, being electrically conductive, being machinable and having sufficient strength to be made into a rotating disk.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Novak et al. as modified by Ulbrich, Nelle et al., Schunck et al., Dostal, and Fulwood et al. as applied to claim 5 above, and further in view of Munch et al. Novak et al. as modified by Ulbrich, Nelle et al., Schunck et al., Dostal, and Fulwood et al. discloses a liner guide with an exciter block and guide carriage but does not disclose the relative locations of the exciter block housing, the face of a guide carriage and the direction of travel. However Munch et al. discloses a measuring head mounted on the face of a carriage in the direction of travel of the carriage relative to a moving object. Since Munch et al. and Novak et al. as modified by Ulbrich, Nelle et al., Schunck et al., Dostal, and Fulwood et al. are all from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have arranged the measuring head of a linear guide having an exciter block to be located on the front face of a

carriage. Also, according to *In re Japikse*, 86 USPQ 70 (CCPA 1950), changing the location of a part when the operating of a device is not affected by the change is not a patentable advance.

Claims 7 and 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Novak et al. as modified by Ulbrich, Nelle et al. and Schunck et al. as applied to claim 1 above, and further in view of Munch et al. Novak et al. as modified by Ulbrich, Nelle et al. and Schunck et al. discloses a liner guide with an exciter block and guide carriage but does not disclose the relative locations of the exciter block housing, the face of a guide carriage and the direction of travel. However Munch et al. discloses a measuring head mounted on the face of a carriage in the direction of travel of the carriage relative to a moving object. Since Munch et al. and Novak et al. as modified by Ulbrich, Nelle et al. and Schunck et al. are all from the same field of endeavor it would have been obvious at the time the invention was made for one of ordinary skill in the art to have arranged the measuring head of a linear guide having an exciter block to be located on the front face of a carriage. Also, according to *In re Japikse*, 86 USPQ 70 (CCPA 1950), changing the location of a part when the operating of a device is not affected by the change is not a patentable advance.

In regard to claim 13, Munch et al. discloses a measuring head mounted on the face of a guide carriage but does not disclose how the head is mounted. However fastening parts together is well known in the art. Welding, nailing, gluing, using Velcro and using straps are all know fastening means. As long as the operating of a device is not changed by the means of fastening, the method of fastening the measuring head to the carriage is not viewed as being a patentable advance.

***Allowable Subject Matter***

Claims 3, 8, 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art of record does not disclose or teach a guide rail made of hardenable roller bearing steel where the guide rail functions as an eddy current sheet as recited in claim 3. The prior art of record does not disclose or teach a rotating disk driven by the guide rail where the rotating disk functions as an eddy current sheet as recited in claim 8. The prior art of record does not disclose or teach the eddy current sheet being a part of a beam having a U-shaped cross section that forms a cable channel for a drag chain as recited in claim 10.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Hinds et al. 4,654,571 teaches that granite bases and guides as used by Novak et al. are difficult to fabricate. Vanooteghem et al. 5,740,489 teaches making guides from hardened steel. Walters 3,981,441 teaches frictionally driving disks. Gularte 4,041,672 teaches motor driven drag chains.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Judson H Jones whose telephone number is 703-308-0115. The examiner can normally be reached on 8-4:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



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JHJ *JHJ*  
December 15, 2002

*John Jones*  
*AU 2834*